International Scientific Conference

ABSTRACT BOOK

7-10 July 2015 • Paris, France

This Abstract book is based on a compilation of all abstracts selected for oral and poster presentations, as of 15 May 2015.

Due to the inability of some authors to attend, some of those works will therefore not be presented during the conference.

OUR UNDER
COMMON CLIMATE
FUTURE CHANGE

Welcome to the Conference

Welcome to Paris, welcome to 'Our Common Future under Climate Change'!

On behalf of the High Level Board, the Organizing Committee and the Scientific Committee, it is our pleasure to welcome you to Paris to the largest forum for the scientific community to come together ahead of COP21, hosted by France in December 2015 ("Paris Climat 2015").

Building on the results of the IPCC 5th Assessment Report (AR5), this four-day conference will address key issues concerning climate change in the broader context of global change. It will offer an opportunity to discuss solutions for both mitigation and adaptation issues. The Conference also aims to contribute to a science-society dialogue, notably thanks to specific sessions with stakeholders during the event and through nearly 80 accredited side events taking place all around the world from June 1st to July 15th.

When putting together this event over the past months, we were greatly encouraged by the huge interest from the global scientific community, with more than 400 parallel sessions and 2200 abstracts submitted, eventually leading to the organization of 140 parallel sessions.

Strong support was also received from many public French, European and international institutions and organizations, allowing us to invite many keynote speakers and fund the participation of more than 120 young researchers from developing countries. Let us warmly thank all those who made this possible.

The International Scientific Committee deserves warm thanks for designing plenary and large parallel sessions as well as supervising the call for contributions and the call for sessions, as well as the merging process of more than 400 parallel sessions into 140 parallel sessions. The Organizing Committee did its best to ensure that the overall organization for the conference was relevant to the objectives and scope. The High Level Board raised the funds, engaged the scientific community to contribute and accredited side events. The Conference Secretariat worked hard to make this event happening. The Communication Advisory Board was instrumental in launching and framing our communication activities on different media. We are very grateful to all.

We very much hope that you will enjoy your stay in Paris and benefit from exciting scientific

interactions, contributing to the future scientific agenda. We also hope that the conference will facilitate, encourage and develop connections between scientists and stakeholders, allowing to draw new avenues in the research agenda engaging the scientific community to elaborate, asses and monitor solutions to tackle climate change together with other major global challenges, including sustainable development goals.

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P-3330-81

Heat effects of ambient apparent temperature on total non-accidental mortality in Cape Town, Durban and Johannesburg, South Africa: 2006-2010

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INTRODUCTION
Although many studies of temperature have been conducted in other disciplines such as climatology, they have only received greater attention in public health and epidemiology in the past decade. However, very few studies have been conducted in Africa and none which also controlled for possible confounding by air pollution. Epidemiological studies are crucial to understand possible local human health impacts due to climate change, and to the development of adaptation strategies to mitigate such impacts.

METHODS
The objective of this study was to investigate the influence of heat effects of ambient apparent temperature (Tapp) on total non-accidental mortality in Cape Town, Durban and Johannesburg, South Africa (2006-2010) using the time-series and case-crossover epidemiological study designs. The heat effect was investigated for apparent temperature above the city threshold, 15°C, 20°C and 13°C for Cape Town, Durban and Johannesburg, respectively. The three cities are classified in different Köppen-Geiger climatic zones: Cape Town has a Mediterranean climate (Csb). Durban has a humid subtropical climate (Cfa), that closely borders a tropical wet and dry climate (Aw). Johannesburg has a subtropical highland climate (Cwb).

RESULTS
In Cape Town, total non-accidental mortality significantly increased by 1.1% and 2.1% for all ages (60228 deaths) and >=60 year olds (28383 deaths), respectively per °C increase in Tapp above 15°C (lag0-1). No heat effect was observed for 0-4 year olds (4649 deaths). The maximum Tapp (lag0-1) observed was 27°C.

In Durban, total non-accidental mortality significantly increased by 1.0%, 1.4% and 1.9% for all ages (95269 deaths), >=60 year olds (28801 deaths) and 0-4 year olds (8628 deaths), respectively per °C increase in Tapp above 20°C (lag0-1). The maximum Tapp (lag0-1) observed was 31°C.

In Johannesburg, total non-accidental mortality significantly increased by 0.5% and 1.2% for all ages (94900 deaths) and >=60 year olds (31859 deaths), respectively per °C increase in Tapp above 13°C (lag0-1). No heat effect was observed for 0-4 year olds (10080 deaths). The maximum Tapp (lag0-1) observed was 24°C.

CONCLUSION
These results indicate that the health of the South African population living in Cape Town, Durban and Johannesburg is at risk with increases in Tapp. The study will be expanded to include four other South African cities located in different Köppen-Geiger climatic zones. Cause-specific mortality, such as respiratory and cardiovascular mortality, will also be investigated.

P-3330-82

Participatory approach for the integrated management of a wet ecosystem in a context of climate change: Inner Niger Delta (Mali)

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Long about 4100 km, the Niger River in its central part in Mali, extends an area which can reach 40.000km2 called the Inner Niger Delta. Largest wetland in West Africa, delta's hydrosystem is constituted by main branches, effluents and distributaries of the river, ponds rosaries, large lakes and channels. Right in the Sahel, the delta is an important productive ecosystem with a rich biodiversity. One million person derive their livelihood from this ecosystem through key activities such as fishing, livestock and agriculture mainly rice farming. With the climate crisis of the 70s, the Niger River Basin and its tributaries are subjected to high rainfall deficit causing a flood decrease in the delta. This resulted in a reduction of 50% of inundated areas. The climate crisis affects the socio-economic activities because the productivity is related to the hydrological regime and maximum areas inundated. There is also a demographic pressure leading to overexploitation and degradation of the delta ecosystem. This situation is not without creating tension in the management of resources, including use conflicts such as agricultural encroachment on pastoral areas; the non respect of transhumance calendar, use of prohibited fishing gear. The delta resources dwindle and production systems degrade and populations have to adapt.

Thus in this study we have developed with local stakeholders, sustainable management strategies of delta resources to deal with the marked variability of climate and demographic pressure. Strategies are a combination of technical options and economic instruments. Technical options include options locally developed complemented by a literature review covering WOCAT (World Overview of Conservation Approaches and Technologies) technicals. Economic instruments have been selected with tools like the DST and DESS developed in the frame of AFROMAISON project. The approach adopted is participative, mainly based on focus groups and workshops with stakeholders. Strategies contribute to the following goals: securing water in the delta, the assurance of integrated resource management; and strengthening the capacity of actors to the mastery of biodiversity conservation techniques and sustainable use of the resources.

P-3330-83

Interaction between moist Kelvin waves and synoptic variability of precipitation over Congo basin

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The synoptic structure and variability of moist synoptic Kelvin waves over the Congo basin during March to June(1979-2010) are explored using satellite-observed brightness temperature (Tb), outgoing longwave radiation (OLR) and National Centers for Environmental Prediction-National Center for Atmospheric Research (NCEP-NCAR) reanalysisdata.We found that synoptic Kelvin waves (SKWs) activity is most predominant during March-May and it is centered at the equator where the convective active phase of these waves favors formation of convective synoptic systems. A brief analysis of an intense Kelvin wave in March-May 1999 (active year) shows a clear impact of the wave on convective development and daily rainfall over Congo basin. Convection is found to be less frequent immediately prior to the passage of the convectively active phase of the convectively coupled atmospheric equatorial Kelvin wave(CCKW), more frequent during the passage, and most frequent just after the passage. Otherwise, Results show marked interannual variability of Kelvin wave activity over Congo basin. The large synoptic variability of precipitation are observed from March-May which clearly denotes synoptic activity in this region. Interannual variability in thefluctuation strength of the wavelet power spectrum as well as in its distribution amount different periods. Strong signalis clearly found at period between 4-6 day and 7-9 day. The location of peak SWKs convection are consistent with high rainfall location and clearly impacted crops yield over this region.